

I. REJECTIONS UNDER 35 USC 102(b)

The Examiner has rejected Claims 1-24 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,647,039 to Noffsinger (hereinafter "Noffsinger"). As noted by the Examiner, 35 U.S.C. 102(b) states that:

A person shall be entitled to a patent unless--

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Therefore, the above mentioned claims will be unpatentable if each element of the respective claims is disclosed or taught by Noffsinger.

With respect to the support structure claimed by Applicant in Claim 1 and described in the specification, Noffsinger's disclosure of a frame does not disclose a support structure as claimed by the Applicant. Noffsinger discloses a frame described as "any suitable frame assembly 12 mounted on top of a platform." Noffsinger, Column 2, lines 31-32. In contrast, Applicant's support structure "includes a frame 1 that is a configuration of supports made of metal of high stress capacity." Applicant, page 6, lines 21-22. This fact alone is enough to show that the frame of Noffsinger does not teach or disclose the Applicant's support structure. Applicant's support structure is optimized for high force, positionally exact, measured static resistance, whereas the frame disclosed by Noffsinger does not include or teach such limitations.

With respect to Claim 2, Applicant claims a support structure that "includes supports designed to resist strongest range of motion of muscular force applied by a human body during use." Applicant, Claim 2. Although the Examiner points out that

Noffsinger discloses a support structure designed to resist range of motion of muscular force, this allegation is immaterial to the present inquiry. A key characteristic of the support structure, as pointed out in Claim 2, is that it must resist the *strongest range of motion* of muscular force. Although the term is known to those of ordinary skill in the art, the Examiner has missed its importance.

The strongest range of motion of muscular force, as used in the art, refers to that range of motion whereby the greatest force is generated over the range of motion for a particular exercise. For example, consider a typical chest exercise, the bench press. Generally, this exercise is performed by lying on a bench, grasping a bar with the hands with arms fully extended, lowering the bar to the chest, and raising it to a full extension once again. During this range of motion, there will exist a portion where the force generated by the user is the greatest. This will occur for the bench press exercise at some point after raising the bar, and prior to reaching a full extension. Each exercise may have a different point where the strongest range of motion of muscular force is achieved. It is also important to note that the strongest range of motion forces are two to ten times greater than the force typically exerted in prior art exercise equipment. Therefore, a unique and specialized structure had to be invented by the Applicant such that these forces could be properly harnessed in a structure optimized only to perform strongest range static exercises.

With respect to Claim 3, the Examiner has stated that Noffsinger discloses a base member. This may be accurate, but is not determinative with respect to Applicant's invention. Applicant's base portion of the support structure is actually holding the apparatus down while the user lifts up, and this is a unique feature in that prior art

machines usually provide enough resistance to the user generated force by means of the machines' own weight. This is not the case with Applicant's invention and method because the strongest range of motion generates forces that would allow most people to easily lift far more than their body weight and the weight of the machine combined. Therefore, the base is actually a key component in holding the machine down; a key component that is not present in the prior art.

Regarding the Examiner's treatment of Claims 4-5, the Examiner has stated that Noffsinger "reasonably suggests that the bar may be detached." Applicant is at a loss to determine anything in Noffsinger that suggests, reasonably or otherwise, that the bar of Noffsinger may be detached. To the contrary, Figure 1 of Noffsinger depicts the bar 20 connected to upper ends of linkage drive assemblies 22 through slide blocks or plates 24" Noffsinger col. 2, lines 41-43. Even more to the point, Noffsinger discloses that "a cross-sectionally rectangular sleeve 48 is fixed as by welding to each end portion of the bar 20." Noffsinger, col. 2, lines 62-64. Not only does this not reasonably suggest that the bar may be detached, it explicitly discloses just the opposite, that the bar is welded in place. As a result, the Examiner's assertion that Noffsinger reasonably suggests that the bar may be detached is not supported.

The same arguments and disclosure with regard to Claims 4-5 may be looked to with respect to the Examiner's assertion with respect to Claims 6-7. The Examiner alleges that Noffsinger teaches "securing means for coupling the user engageable member to the support structure in a manner to permit the first end and second end of the user engageable member to be secured to the support position." As previously noted, the bar of Noffsinger is welded in place. Nothing in Noffsinger conveys that the bar may be

detached, nor would it make sense to do so based on how Noffsinger operates through drive assemblies powered by a DC motor.

With regards to Claims 8-12, nowhere does Noffsinger state that the goal of the exercise is to produce the maximum force in the strongest range. This is not a stated goal simply because the device claimed by Noffsinger is not capable of allowing an individual to perform an exercise, producing the maximum force in the strongest range. Therefore, although Noffsinger discloses a measuring means, and a display, the measuring means does not measure the strongest range of motion as known in the art, and as further explained above. Additionally, Noffsinger teaches that "the data obtained by the monitoring measurements of the strain gauges 58 and position encoder 60 may also be readout under direction of the keyboard 104 on a display screen 106." Noffsinger's display would not operate within Applicant's invention, therefore, it can not be said to anticipate it. The portable feedback device disclosed by Applicant, as shown in Figures 1 and 2, must be positioned in close proximity to the user such that the onset of complete muscle fatigue may be identified. The display then becomes another important part of the invention that must operate without the need for direction of a keyboard, or other user input means.

With regards to Claims 13-24, the above remarks and arguments will be equally applicable, thus the rejections of these Claims are likewise traversed.

With regards to Claim 14, the key feature of note is that the bench must be able to withstand the forces that accompany the strongest range of motion as outlined above. Noffsinger does not disclose a support structure capable of doing this, and therefore, Noffsinger is incapable of anticipating Applicant's invention.

## II. REJECTIONS UNDER 35 USC 103(a)

The Examiner has rejected Claims 25-44 under 35 U.S.C. 103(a) as being unpatentable over Noffsinger. As noted by the Examiner, 35 U.S.C. 103(a) states that:

a patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Therefore, Applicant's invention will be unpatentable if the differences between it and the knowledge disclosed in the patent granted to Noffsinger are such that Applicant's invention would have been obvious.

The Examiner has cited Noffsinger as reasonably conveying "an exercise method involving exerting a force in the position of strongest range of motion (benching), recording the value of the force inherently abstaining for a period of time as is well known in the art, and exerting a second force and recording its value, and exercising a second abstention period." General assertions that prior art "reasonably conveys" certain information does little in establishing a prima facie showing of obviousness. It is unclear whether the Examiner is citing to Noffsinger or from personal experience when making references to "pyramiding up," "pyramiding down," "working till failure" as none of these terms are disclosed in Noffsinger, nor would knowledge of these terms in combination with Noffsinger render Applicant's invention obvious. In addition, the concept of pyramiding up and pyramiding down involve multiple sets of the same exercise during a single workout, which is a different use of the word abstention than the Applicant intends. The Applicant is referring to "abstaining additional *days* between workouts," not "additional *minutes* between sets," as the concept of pyramiding up would imply.

Firstly, Noffsinger does *not* in any manner convey an exercise method involving exerting a force in the position of strongest range of motion. As discussed above, the strongest range of motion is a concept that does not enter Noffsinger or anything it teaches. The Examiner's reference to so-called "well known exercise principles such as 'pyramiding up'" merely illustrates that the Examiner does not understand the concept of the strongest range of motion as it is known in the art.

The exercise method disclosed by Applicant does not anticipate exerting more or less force in subsequent exercises. Rather, Applicant's method measures what the force exerted during the strongest range of motion and at maximum momentary intensity happens to be; without regard to whether the force is greater or less than the force exerted during a previous exercise. The method then uses this information to plan the appropriate period of abstention days between workouts.

With respect to Claims 28 and 33, the specific time of exercise is only variable if it is allowed to be. Applicant has determined that complete muscle fatigue occurs substantially within ten seconds. Muscle fatigue will generally not occur within one second, and will generally occur prior to twenty seconds when an all-out exertion in strongest range of motion exercise is performed. Therefore, the specific time of an exercise is *not* variable within the method of the present invention. There is no varying "level of exercise desired" as opined by the Examiner that might be reached by varying the length of time an exercise is performed. The time of exercise is strictly determined by the feedback from the meter. The level of exercise does not vary. It is maximal intensity.

With respect to Claims 29 and 34, the Examiner mischaracterizes "working till failure" by attempting to analogize the concept to Applicant's invention. Complete muscle fatigue as known in the art, is not a subjective feeling of fatigue. Rather, it is a quantitatively definable and objectively determinable point that can be measured through Applicant's method of using a portable feedback device to display maximum exertion. The phrase "working till failure" as referred to by the Examiner refers to the point where an individual can no longer maintain a resistant force. For example, when an individual performs a free-weight bench press exercise, a spotter is typically used to catch the bar when the individual can no longer press it. This is simply not what is meant by the phrase "complete muscle fatigue." Working to failure, as it is described by the applicant, requires performing an exertion that is high enough to exhaust the creatine phosphate in Fast Glycolytic (FG) fibers, as evidenced by the meter's current reading dropping rapidly from a maximum point despite the individual's maximum effort. This will generally occur within ten seconds from the beginning of exertion, or when the portable feedback device indicates that maximum exertion has been achieved by the fact that further exertion produces a decrease. Note, this is in contrast to complete muscle fatigue that occurs in full range exercises at a sub maximal level typically at approximately 70 seconds. Working to failure in strongest range of motion at maximum intensity happens far quicker than in arbitrary ranges and full ranges of motion. As a result, these claims can not be viewed as obvious in light of the evidence cited by the Examiner.

In rejecting Claims 30 and 34, the Examiner opines that the "skilled artisan would not want to risk injury during exercise exertion." Applicant first points out that many skilled artisans exercise during and through the feeling of pain. Applicant's method

requires immediate cessation of exertion at the first feeling of pain, and a record made of the force generated. This feature, combined with the users focused subjective experience of what is specifically causing the pain allows the method to be extremely beneficial in rehabilitation exercises in that the exercise form, the time of the exercise, and the necessary scheduling are now both exact, and minimal to both the patient and any practitioner. As well, the user has experienced not some arbitrary pain point, but the lower threshold at which pain begins. By knowing this threshold, and avoiding it in day to day life, the user speeds rehabilitation between sessions. As long as the force generated exceeds the previous workout's force, the abstention period remains the same. The goal is that with the appropriate abstention periods, the exerted force will continue to increase until full recovery is achieved. This methodology is not disclosed by Noffsinger alone, or in combination with any knowledge within the art, and accordingly Applicant's claims can not be viewed as obvious.

With regard to Claim 36, the Examiner claims that Noffsinger teaches that a maximum value be retained. Applicant notes that the phrase "maximum value" is not specifically mentioned by Noffsinger. This is not surprising because Noffsinger does not contemplate the use of the maximum value in any way, and certainly not in the way that Applicant does. Applicant uses the maximum value as an objective measure to determine abstention times necessary for maximum muscle gain. Noffsinger does not explicitly mention a maximum value, does not allude to it, nor implicitly utilize it in any way; as such there can be no way that Noffsinger can render Applicant's claim obvious with regard to a maximum value.



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As should now be clear, the rejection to Claims 38-44 can not stand because the period of abstention is not some arbitrary period based on individual recovery time, or whether one who exerts more force will be more sore or not. Again, none of these concepts are touched upon, or even mentioned, in the patent cited by the Examiner as the basis for the rejection. Regardless of this fact, Applicant once again points out that the period of abstention has absolutely no bearing on whether an individual feels pain, is sore, or any other subjective determination. The abstention periods are solely determined by maximum results achieved in the most recent workout, and the period will increase when the maximum does not increase relative to the previous workout. This methodology has not been disclosed by the prior art, nor is it known in the art. As a result, Claims 38-44 can not be viewed as obvious in view of Noffsinger.

Reconsideration and further examination is respectfully requested. The Commissioner is hereby authorized to charge any additional fees which may be required for this amendment, or credit any overpayment to Deposit Account No. 12-0115.

In the event that an extension of time is required to file this response, the Commissioner is requested to grant a petition for that extension of time that is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to Deposit Account No. 12-0115.

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Applicant has made a diligent effort to place the claims in condition for allowance. However, should there remain unresolved issues that require adverse action, it is respectfully requested that the Examiner telephone Patrick D. Archibald, Applicant's Attorney at (617) 720-0091 so that such issues may be resolved as expeditiously as possible.

For these reasons, and in view of the above amendments, this application is now considered to be in condition for allowance and such action is earnestly solicited.

Respectfully Submitted,

<u>June 2, 2005</u>	<u>Patrick D. Archibald</u>
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